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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,095	07/11/2003	Kristofer J. James	279.645US1	3840
21186	7590	04/17/2006	EXAMINER	
SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A. P.O. BOX 2938 MINNEAPOLIS, MN 55402			TIBBITS, PIA FLORENCE	
			ART UNIT	PAPER NUMBER
			2838	

DATE MAILED: 04/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/618,095

Applicant(s)

JAMES ET AL.

Examiner

Pia F. Tibbits

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 13-29 is/are allowed.
- 6) ☒ Claim(s) 1-7 and 30 is/are rejected.
- 7) ☒ Claim(s) 8-12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This Office action is in answer to the amendment filed 10/17/2005. Claims 1-30 are pending.

Claim Objections

1. Claim 20 is objected to because of the following informalities: "a processor circuit, coupled to the difference circuit" is incorrect as fig.1 shows the difference circuit as part of the processor.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 4-7, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Alvarez** [6166524].

Alvarez discloses in figures 1-8 drawing a substantially constant first current pulse from an energy storage cell during a first time period between a starting time and an ending time [see fig.4]; measuring a first change of a terminal voltage across the cell during the first time period [see fig.3; column 3, lines 53-67; column 4, lines 1-29] and comparing the measured first change V2 to first stored data/baseline unloaded voltage [see column 4, line 21]. Alvarez does not disclose specifically determining the energy remaining in the cell. However, Alvarez discloses the method and system are used for evaluating battery in a battery backup or standby system where voltage measurements are taken across each jar in the group at various times during the application of the current load [see abstract]. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to use Alvarez' method for determining the energy remaining in the cell since the examiner takes Official Notice of the equivalence of determining the status of the cell and determining the energy

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remaining in the cell for their use in the energy storage art and the selection of any of these known equivalents to establish the energy remaining in the cell would be within the level of ordinary skill in the art. Inasmuch as the references disclose these elements as art recognized equivalents, it would have been obvious to one of ordinary skill in the exercise art to substitute one for the other. *In re Fout*, 675 F.2d 297, 301, 213 USPQ 532, 536 (CCPA 1982).

With regard to the limitation of having a first time period including a starting time and an ending time: it is an inherent function of a pulse to include a starting time and an ending time, and MPEP 2100 states that the disclosure of a limitation may be expressed, implicit or **inherent**.

Alvarez does not disclose the current pulse comprises drawing a substantially constant current of approximately between 2 amperes and 4 amperes. As to the range of the current pulse comprising drawing a substantially constant current of approximately between 2 amperes and 4 amperes, absent any criticality, is only considered to be the use of "optimum" range for the current pulse, that one having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation, since the courts have held that discovering an optimum range value of a result effective variable involves only routine skill in the art in order to provide guidance to an application specific data. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). See also **MPEP 2144.05** statement with regard to "**obviousness of ranges**".

As to claim 5, see remarks and reference above.

As to claim 6, Alvarez does not disclose the time period is approximately between 3 seconds and 30 seconds. As to the range of the time period being approximately between 3 seconds and 30 seconds, absent any criticality, is only considered to be the use of "optimum" range for the time period, that one having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation, since the courts have held that discovering an optimum range value of a result effective variable involves only routine skill in the art in order to provide guidance to an application specific data. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). See also **MPEP 2144.05** statement with regard to "**obviousness of ranges**".

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As to claims 7, 30, see remarks and reference above.

4. Claims 2, 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Alvarez**, as disclosed above, in view of **Takeuchi et al.** [6166524].

Alvarez does not disclose drawing the first current pulse from the cell comprises drawing the first current pulse from a manganese dioxide battery.

Takeuchi discloses using a manganese dioxide battery [see column 2, line 53] when load variations can occur in an implantable medical device wherein the cell may discharge for extended periods under a light load interrupted by pulse discharge [see column 1, lines 50-52]. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Alvarez' apparatus and include a manganese dioxide battery, as disclosed by Takeuchi, in order to accommodate load variations in an implantable medical device.

As to claim 3, see remarks and references above.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Response to Arguments

6. Applicant's arguments with respect to the claims have been considered but are moot in view of the new grounds of rejection.

Allowable Subject Matter

7. Claims 8-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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With respect to claim 8: none of the references of record prior to applicant's filing date discloses, teaches, or suggests a method comprising, *inter alia*, the measuring the first change comprises measuring a polarization angle.

With respect to claim 9: none of the references of record prior to applicant's filing date discloses, teaches, or suggests a method comprising, *inter alia*, measuring a first terminal voltage across the cell just after the starting time; measuring a second terminal voltage across the cell just before the ending time; and dividing a difference between the first and second terminal voltages by a time difference between the measurements.

With respect to claim 10: none of the references of record prior to applicant's filing date discloses, teaches, or suggests a method comprising, *inter alia*, in which the first stored data includes two different stored capacity values corresponding to a single change in terminal voltage across the cell during the first time period, and further comprising: measuring a quiescent voltage of the cell; and comparing the measured quiescent voltage to a predetermined threshold to distinguish between the two different stored capacity values that correspond to the single change in terminal voltage across the cell.

With respect to claim 11: none of the references of record prior to applicant's filing date discloses, teaches, or suggests a method comprising, *inter alia*, measuring a quiescent voltage of the cell; and comparing the measured quiescent voltage to second stored data to determine the energy remaining in the cell.

8. Claims 13-19 are allowed.

With respect to claims 13-19: none of the references of record prior to applicant's filing date discloses, teaches, or suggests a method comprising, *inter alia*, measuring a second change in the terminal voltage across the cell during the second time period; and comparing the measured second change to first stored data to determine an energy remaining in the cell, including comparing the first and second changes to distinguish between two different stored capacity values that correspond to a single change in the terminal voltage across the cell.

9. Claims 20-29 are allowed.

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With respect to claims 20-29: none of the references of record prior to applicant's filing date discloses, teaches, or suggests a method comprising, *inter alia*, a difference circuit, coupled to the voltage measurement circuit, to compute a difference between the first and second voltages; and the processor circuit including a memory circuit to store first data relating cell capacity to the difference between the first and second voltages, the memory circuit also including a cell capacity indicator storage location to provide an indication of cell capacity, the processor configured to use the difference between the first and second voltages obtained from the difference circuit and the stored first data indicative of cell capacity to provide the indication of cell capacity.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in PTO-892 and not mentioned above disclose related apparatus.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Pia Tibbits whose telephone number is 571-272-2086. If unavailable, contact the Supervisory Patent Examiner Karl Easthom whose telephone number is 571-272-1989. The Technology Center Fax number is 571-273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PFT

April 8, 2006

Pia Tibbits

Primary Patent Examiner

